

>> Diane Jewell: If the pH is 5.85, calculate the hydronium ion concentration. I want to point out something to you. Look at the pH value, 5.85. In this pH, there are no zeros after the decimal point. There are actual non-zero digits here. So, I want you to recall something from another problem we worked, where we had the hydronium ion concentration was 5.5 times 10 to the negative third; pH was 2.26. You notice that there's non-zero numbers after the decimal point. That's because of the fact that the coefficient up here is not one. This means, then, that to have gotten from here to here, we had to use a calculator. Well, looking at this, seeing that we have non-zero numbers here, again, we have to get our answer by using a calculator. And so, we'll look again at the two types of calculators and how to use them, how to input the information. On our simpler model of calculators, you're going to put in, remember pH was 5.85. You're going to put in your 5.85. Press the plus-minus button. Now you're going to press this button here that says 2nd, and press the log button. What you're doing is instead of taking the log of your number 5.5, you're taking the opposite of the log, okay? And so, second tells us that this is going to be the opposite of the log. In other words, we're taking the 10 to the x button up here; 2nd actually gives us access to the whatever is printed above the button, and then press the equals sign here, and you'll end up with your answer, which turns out to be 1.4 times 10 to the minus 6 molar. Okay, we'll put in the molar, but 1.4 times 10 to the negative 6. Now, if you have an advanced calculator like the TI, you're going to be pressing, first off, you're going to start with your 2nd button. The second button is usually on the far-left at the top right underneath the screen. You'll see the word – the button that says 2nd or it may say shift. There's a couple of different things it could say. So, you're pressing your second button. Again, you want to do the inverse of the log. So, second log. So, we're going to actually be using this function here. And then, a negative sign and 5.85. Close the parentheses, and enter. So, we're actually going backwards. We're taking the opposite of the log of what we have here for our pH, and it ends up giving us a number, usually in scientific notation, and that represents the hydronium ion concentration of a solution with that pH.